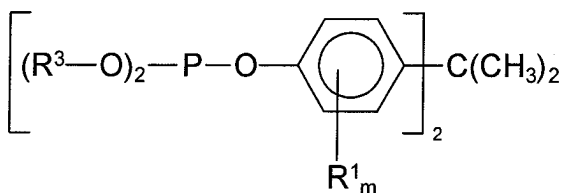

In the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims

1. (deleted)
2. (currently amended) The composition of claim 10 wherein
 - (a) said ratio is from about 75:1 to 6:1.
3. (currently amended) The composition of claim 2 wherein
 - (a) said ratio is from about 73:1 to 8:1.
4. (currently amended) The composition of claim 10 wherein said at least two phosphite esters are selected from the group consisting of
 - (a) ~~C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV) and C₄₋₉ alkyl substituted derivatives thereof~~



(IV)

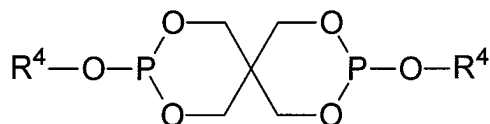
wherein

R^1 is independently selected from the group consisting of H and ~~C₄₋₉ alkyl~~, H, C₁₋₁₈ alkyl, C₁₋₁₈ alkoxy, halogens and

R^3 is C₁₀₋₁₅ alkyl, and

m is an integral value from 0 to 4 5 inclusive, and

- (b) ~~C₈₋₁₅ pentaerythritol phosphites of formula (VI) and C₄₋₉ alkyl substituted derivatives thereof~~



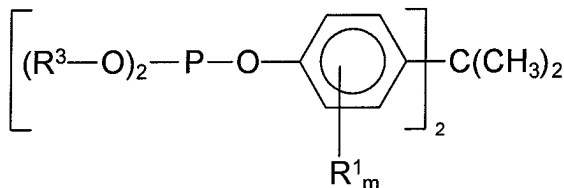
(VI)

wherein

R^4 is the same as R^1 selected from the group consisting of C_{8-18} alkyl, C_{6-30} aryl, C_{6-30} fused aryl rings, C_{7-35} alkylaryl, C_{7-35} arylalkyl and substituted derivatives thereof wherein the substituents are selected from the group consisting of halogens, hydroxyl, C_{1-4} alkyl and C_{1-4} alkoxy.

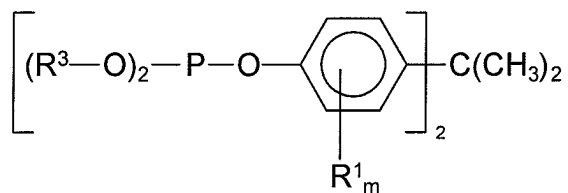
5. (previously presented) The composition of claim 4 wherein a percentage weight loss of said additive composition as measured as a difference between a start and an end weight of said composition as measured after exposure to two hours at 110°C, is less than 1% by weight.
6. (currently amended) The additive composition of claim 5 wherein a percentage weight loss is less than 0.5% by weight.
7. (currently amended) The composition of claim 4 wherein

(a) a first phosphite ester is C_{10-15} alkyl bisphenol-A phosphites of formula (IV) and C_{4-9} alkyl substituted derivatives thereof



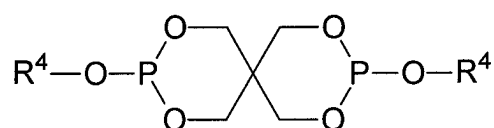
(IV), and

- (b) at least one second phosphite ester is selected from the group consisting of
- (i) C_{10-15} alkyl bisphenol-A phosphites of formula (IV)



(IV), and

(ii) C₈₋₁₅ pentaerythritol phosphites of formula (VI)

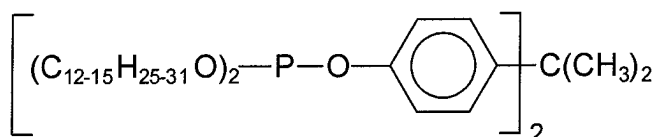


(VI)

8. (deleted)

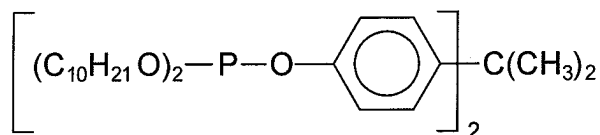
9. (currently amended)) The composition of claim 10 wherein said at least two phosphite esters is selected from the group consisting of

C₁₂₋₁₅ bisphenol-A phosphite of formula (VIII)



(VIII), and

C₁₀ bisphenol-A phosphite of formula (IX)



(IX)

10. (currently amended) A stabilized vinyl resin stabilizer additive composition which ~~comprises~~ consists of:

- ~~(a) an additive composition for use as at least a partial replacement for mixed metal, alkali metal and tin-based stabilizer additives for use in said vinyl resin; and~~
- ~~(b) a halogenated resin; and~~
- ~~(c) wherein said additive composition consists of:~~
 - (i) at least two phosphite esters selected from the group consisting of C₁₀₋₁₅ alkyl bisphenol-A phosphites and C₁₋₉ alkyl substituted derivatives thereof, and C₈₋₁₅ pentaerythritol phosphites; and
 - (ii) a zinc additive wherein a molar ratio of P/Zn is from about 80:1 to 4:1, and further wherein said additive composition is free of calcium, cadmium, barium and tin.

11. (original) The composition of claim 10 wherein a level of zinc is approximately 50 to 800 ppm zinc per 100 parts resin.

12. (original) The composition of claim 11 wherein said level of zinc is approximately 100 to 500 ppm zinc per 100 parts resin.

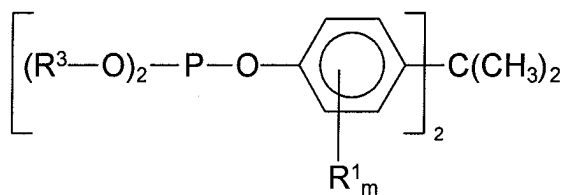
13. (original) The composition of claim 12 wherein said level of zinc is approximately 100 to 250 ppm zinc per 100 parts resin.

14. (original) The composition of claim 11 wherein said ~~halogenated~~ resin is flexible polyvinyl chloride.

15. (deleted)

16. (currently amended) A stabilized halogenated vinyl resin stabilizer additive composition which ~~comprises~~ consists of:

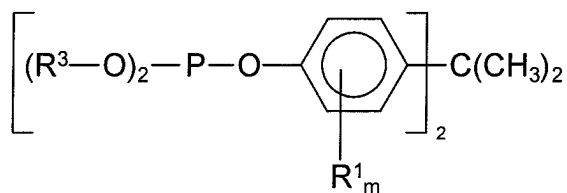
- ~~(a) an additive composition for use as at least a partial replacement for mixed metal, alkali metal and tin-based stabilizer additives for use in said vinyl resin; and~~
- ~~(b) a halogenated resin; and~~
- ~~(c) wherein said additive composition consists of at least two phosphite esters, and further wherein a first phosphite ester is C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV) and C₁₋₉ alkyl substituted derivatives thereof~~



(IV), and

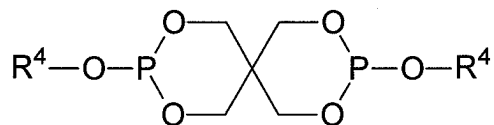
(d) at least one second phosphite ester which is selected from the group consisting of

(i) C_{10-15} alkyl bisphenol-A phosphites of formula (IV)



(IV), and

(ii) C_{8-15} pentaerythritol phosphites of formula (VI)



(VI),

and wherein

R¹ is independently selected from the group consisting of H and ~~C₄₋₈ alkyl~~, H, C₁₋₁₈ alkyl, C₁₋₁₈ alkoxy, halogens and

R³ is C₁₀₋₁₅ alkyl, and

R⁴ is ~~the same as R¹~~ selected from the group consisting of C₈₋₁₈ alkyl, C₆₋₃₀ aryl, C₆₋₃₀ fused aryl rings, C₇₋₃₅ alkylaryl, C₇₋₃₅ arylalkyl and substituted derivatives thereof wherein the substituents are selected from the group consisting of halogens, hydroxyl, C₁₋₄ alkyl and C₁₋₄ alkoxy, and

m is an integral value from 0 to 4 5 inclusive, and

(e) a zinc additive for said additive composition wherein a molar ratio of P/Zn is from about 80:1 to 4:1; and

(f) said additive composition is free of calcium, cadmium, barium and tin.

17. (currently amended) The composition of claim 16 wherein a level of zinc is approximately 50 to 800 ppm zinc per 100 parts ~~polyvinyl-chloride~~ resin.

18. (currently amended) The composition of claim 17 wherein said level of zinc is approximately 100 to 500 ppm zinc per 100 parts ~~polyvinyl-chloride~~ resin.

19. (currently amended) The composition of claim 18 wherein said level of zinc is approximately 100 to 250 ppm zinc per 100 parts ~~polyvinyl-chloride~~ resin.

20. (currently amended) The composition of claim 16 wherein said ~~polyvinyl-chloride~~ resin is flexible polyvinyl chloride.

21. (new) An essentially toxic-metal free liquid additive composition for use as at least a partial replacement of toxic metal stabilizer additive compositions for use in vinyl-containing resins, wherein the essentially toxic-free composition consists of:

at least two phosphite esters selected from the group consisting of C₁₀₋₁₅ alkyl bisphenol-A phosphites and C₁₋₉ alkyl substituted derivatives thereof, and C₈₋₁₅ pentaerythritol phosphites; and

a zinc additive wherein a molar ratio of P/Zn is from about 80:1 to 4:1.

22. (new) The composition of claim 21 wherein

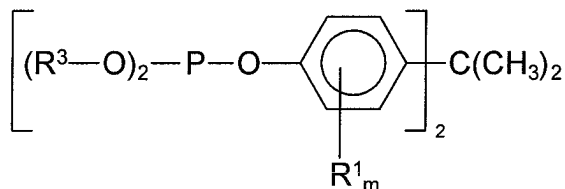
said ratio is from about 75:1 to 6:1.

23. (new) The composition of claim 22 wherein

said ratio is from about 73:1 to 8:1.

24. (new) The composition of claim 21 wherein said at least two phosphite esters are selected from the group consisting of

alkyl bisphenol-A phosphites of formula (IV)



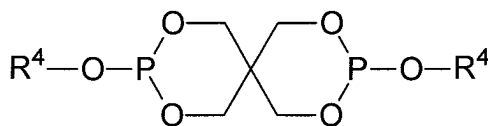
wherein

R¹ is independently selected from the group consisting of H, C₁₋₁₈ alkyl, C₁₋₁₈ alkoxy, halogens and

R³ is C₁₀₋₁₅ alkyl, and

m is an integral value from 0 to 5 inclusive, and

pentaerythritol phosphites of formula (VI)



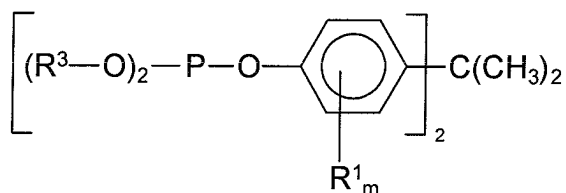
wherein

R⁴ is selected from the group consisting of C₈₋₁₈ alkyl, C₆₋₃₀ aryl,

C₆₋₃₀ fused aryl rings, C₇₋₃₅ alkylaryl, C₇₋₃₅ arylalkyl and substituted derivatives thereof wherein the substituents are selected from the group consisting of halogens, hydroxyl, C₁₋₄ alkyl and C₁₋₄ alkoxy.

25. (new) The composition of claim 24 wherein a percentage weight loss of said additive composition as measured as a difference between a start and an end weight of said composition as measured after exposure to two hours at 110°C, is less than 1% by weight.
26. (new) The composition of claim 25 wherein a percentage weight loss is less than 0.5% by weight.
27. (new) The composition of claim 24 wherein

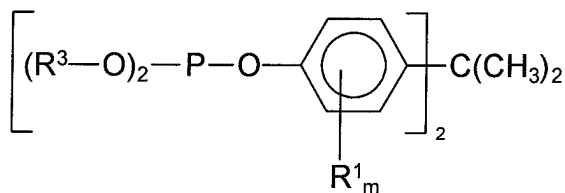
a first phosphite ester is C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV)



(IV), and

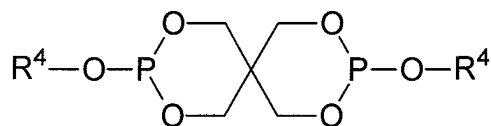
at least one second phosphite ester is selected from the group consisting of

C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV)



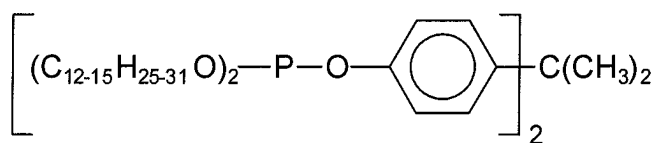
(IV), and

C₈₋₁₅ pentaerythritol phosphites of formula (VI)



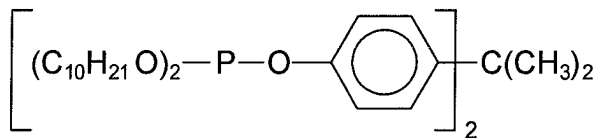
(VI) .

28. (new) The composition of claim 21 wherein said phosphite ester is selected from the group consisting of
 C₁₂₋₁₅ bisphenol-A phosphite of formula (VIII)



(VIII), and

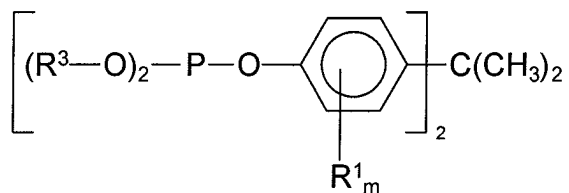
- C₁₀ bisphenol-A phosphite of formula (IX)



(IX) .

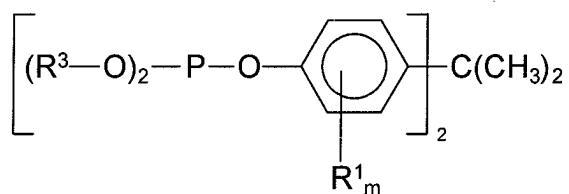
29. (new) The composition of claim 21 wherein a level of zinc is approximately 50 to 800 ppm zinc per 100 parts resin.
30. (new) The composition of claim 29 wherein said level of zinc is approximately 100 to 500 ppm zinc per 100 parts resin.
31. (new) The composition of claim 30 wherein said level of zinc is approximately 100 to 250 ppm zinc per 100 parts resin.
32. (new) The composition of claim 29 wherein said resin is flexible polyvinyl chloride.
33. (new) An additive composition for polyvinyl chloride resin which consists of:

at least two phosphite esters, and further wherein a first phosphite ester is alkyl bisphenol-A phosphites of formula (IV)



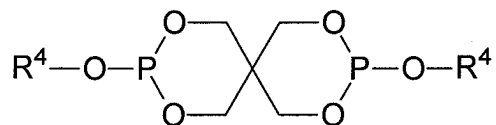
(IV), and

at least one second phosphite ester which is selected from the group consisting of
alkyl bisphenol-A phosphites of formula (IV)



(IV), and

pentaerythritol phosphites of formula (VI)



(VI),

and wherein

R¹ is independently selected from the group consisting of H, C₁₋₁₈ alkyl, C₁₋₁₈ alkoxy, halogens and

R³ is C₁₀₋₁₅ alkyl, and

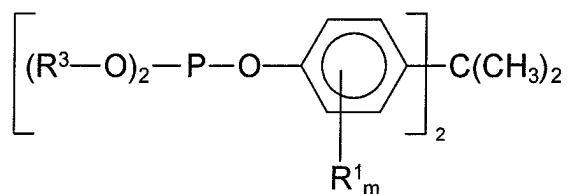
R⁴ is selected from the group consisting of C₈₋₁₈ alkyl, C₆₋₃₀ aryl, C₆₋₃₀ fused aryl rings, C₇₋₃₅ alkylaryl, C₇₋₃₅ arylalkyl and substituted derivatives thereof wherein the substituents are selected from the group consisting of halogens, hydroxyl, C₁₋₄ alkyl and C₁₋₄ alkoxy, and

m is an integral value from 0 to 5 inclusive, and

a zinc additive for said additive composition wherein a molar ratio of P/Zn is from about 80:1 to 4:1.

34. (new) The composition of claim 33 wherein a level of zinc is approximately 50 to 800 ppm zinc per 100 parts resin.
35. (new) The composition of claim 34 wherein said level of zinc is approximately 100 to 500 ppm zinc per 100 parts resin.
36. (new) The composition of claim 35 wherein said level of zinc is approximately 100 to 250 ppm zinc per 100 parts resin.
37. (new) The composition of claim 34 wherein said resin is flexible polyvinyl chloride.
38. (new) The composition of claim 33 wherein said at least two phosphite esters are selected from the group consisting of

C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV)



(IV)

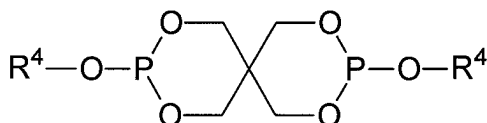
wherein

R¹ is independently selected from the group consisting of H, C₁₋₁₈ alkyl, C₁₋₁₈ alkoxy, halogens and

R³ is C₁₀₋₁₅ alkyl, and

m is an integral value from 0 to 5 inclusive, and

C₈₋₁₅ pentaerythritol phosphites of formula (VI)



(VI)

wherein

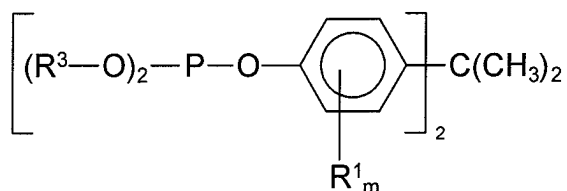
R⁴ is selected from the group consisting of C₈₋₁₈ alkyl, C₆₋₃₀ aryl, C₆₋₃₀ fused aryl rings, C₇₋₃₅ alkylaryl, C₇₋₃₅ arylalkyl and substituted derivatives thereof wherein the substituents are selected from the group consisting of halogens, hydroxyl, C₁₋₄ alkyl and C₁₋₄ alkoxy.

39. (new) The composition of claim 38 wherein a percentage weight loss of said additive composition as measured as a difference between a start and an end weight of said composition as measured after exposure to two hours at 110°C, is less than 1% by weight.

40. (new) The composition of claim 39 wherein a percentage weight loss is less than 0.5% by weight.

41. (new) The composition of claim 38 wherein

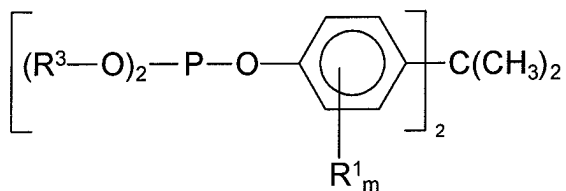
a first phosphite ester is C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV)



(IV), and

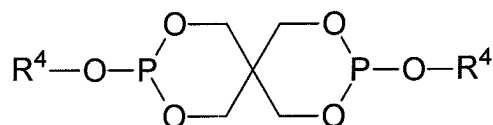
at least one second phosphite ester is selected from the group consisting of

C₁₀₋₁₅ alkyl bisphenol-A phosphites of formula (IV)



(IV), and

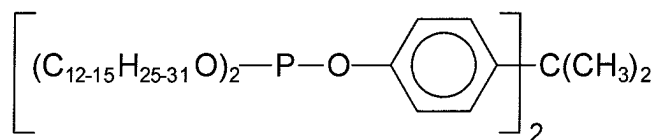
C₈₋₁₅ pentaerythritol phosphites of formula (VI)



(VI) .

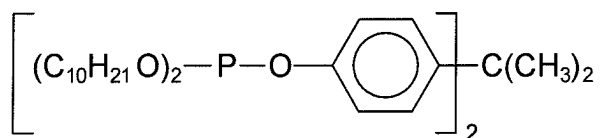
42. (new) The composition of claim 41 wherein said phosphite ester is selected from the group consisting of

C₁₂₋₁₅ bisphenol-A phosphite of formula (VIII)



(VIII), and

C₁₀ bisphenol-A phosphite of formula (IX)



(IX)